

2013 Wyoming Grizzly Bear Job Completion Report



**Wyoming Game and Fish Department
Large Carnivore Section
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INTRODUCTION

This completion report summarizes grizzly bear work that was completed by the Wyoming Game and Fish Department's (Department) Large Carnivore Section (LCS) and regional personnel during 2013. In the past, this information was included in multiple reports that were not readily available to agency personnel, the legislature or the public. This report allows the Department to present information pertaining to grizzly bears in Wyoming in one document so which available to all interested parties.

POPULATION MONITORING – TRAPPING SUMMARY

Annual trapping of grizzly bears has traditionally been labeled as “research” even though it was considered part of the annual monitoring needed to adequately manage grizzly bears. This activity is similar to annual monitoring programs that the Department completes to manage other species, including big game and trophy game. In addition, data collected during annual monitoring activities has been used for various research projects, and more importantly to answer relevant population level questions as they arise.

Data on grizzly bear survival and reproduction, biological samples, and animal locations collar locations are vital components of the overall population monitoring program. This information provides data necessary to ensure that we can accurately monitor the status of grizzly bear populations and maintain recovery goals per the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (2007).

One of the goals of the capture effort is to maintain approximately 25 radio-collared female grizzly bears distributed throughout the Yellowstone area. This assures that we can accurately monitor survival rates that are representative of the entire ecosystem. In order to maintain a representative sample of the overall population, trapping crews systematically trap areas within known grizzly bear distribution, moving among trap sites annually. Once collars are deployed in a specific area, crews will move to another area; this occurs throughout the active period of bears, however much of the collaring efforts for monitoring purposes cease once ungulate hunting seasons are initiated in northwest Wyoming (usually on or around September 1 depending on the specific location of trapping). The following bullets summarize trapping efforts over the course of 2013.

Dubois

Trapping began in the Dubois area on May 14 and ended June 4, 2013. Six trap sites (4 culvert, 2 snare) were set in the area; Brent Creek, Elkhorn, and Double Cabin in the Horse Creek and Wiggins Fork drainages and West Fork, Middle Fork, and East Fork of the Long Creek drainage. Eight grizzly bears were captured (including one recapture) and radio collars were placed on 5 of them (Table 1). Measurements and biological samples were taken from each bear.

Table 1. Grizzly bears captured during population monitoring efforts in the Dubois, WY area, 2013.

Bear ID	Capture Date	Sex/Age	Location	Collar
741	5/22/13	Adult female	Brent Cr	GPS collar
744	5/26/13	Subadult male	Brent Cr	VHF collar
407	5/30/13	Adult male	Double Cabin	GPS collar
746	5/31/13	Adult male	Brent Cr	VHF collar
G191	5/31/13	Subadult male	Elkhorn	No collar
G155	6/2/13	Adult male	Elkhorn	No collar
747	6/4/13	Subadult female	E. Fork Long Cr	VHF ear tag

Upper Green

Trapping began in the Upper Green River/Union Pass area on June 21 and ended July 26, 2013. Ten trap sites (8 culvert, 2 snare) were set in the area. Three grizzly bears were captured in a total of 11 captures (one bear was captured 9 times) and radio transmitters were placed on all 3 animals (Table 2). Measurements and biological samples were taken from each bear.

Table 2. Grizzly bears captured during population monitoring efforts in the Upper Green River area, WY, 2013.

Bear ID	Capture Date	Sex/Age	Location	Collar
752	6/23/13	Subadult male	Heifer Cr	GPS collar
754	6/25/13	Adult male	Strawberry Cr	GPS collar
755	6/25-7/17/13	Subadult female	Long Meadow	VHF ear tag

Thorofare

Trapping began in the Thorofare area on August 23 and ended on September 7, 2013. All trapping efforts occurred on horseback. Four snare sites were set in the area. Two grizzly bears were captured and both were fitted with radio collars (Table 3). Measurements and biological samples were taken from each bear.

Table 3. Grizzly bears captured during population monitoring efforts in Thorofare area, WY, 2013.

Bear ID	Capture Date	Sex/Age	Location	Collar
379	9/1/13	Adult male	Thorofare Cr	GPS collar
764	9/1/13	Adult male	Thorofare Cr	VHF collar

MONITORING – GRIZZLY BEAR OBSERVATION FLIGHTS

The Department employs the use of observation flights in order to monitor the population and estimate abundance. In 2013, the Grizzly Bear Observation Units (GBOUs) in the southern portion of the GYE (Figure 1) were only flown once due to efforts to reduce flight time and the low sightability of grizzly bears in these areas. Flights were conducted in June to maximize the potential for bear observations in these southern units. The northern GBOU's were flown twice, once each in July and August. Observations during Round 1 (June and July flights) were similar to 2012, with 208 total grizzly bears observed compared to 219 in 2012 (Table 4). Near normal snowfall and snowmelt in the winter of 2012-13 again created favorable conditions for army cutworm moths to colonize some traditional sites in talus slopes, particularly in the eastern GBOUs in Wyoming. The number of females with cubs-of-year (F_{coy}) groups observed in Round 1 was comparable to that of 2012, with 23 observed in 2013 (Table 4) compared to 20 in 2012.

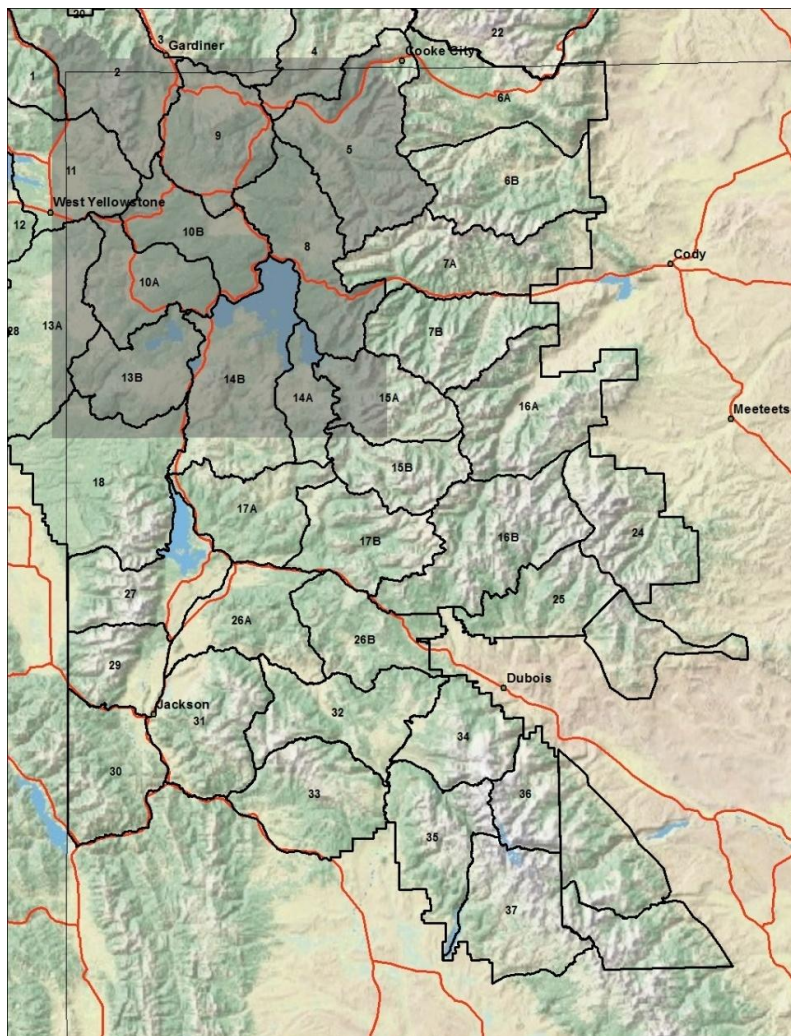


Figure 1. Grizzly Bear Observation Units (GBOU's).

Table 4. Composition of grizzly bears observed in Round 1 during 2013 observation surveys in Wyoming.

Date	Unit	Females with COY			Females with Yearlings			Females with 2 Year Olds			All Other Grizzly Bears	Total No. Bears Observed
		# of COY			# of Yrlngs			# of 2 Yr Olds				
		1	2	3	1	2	3	1	2	3		
7/12	6A	0	0	0	0	0	0	0	0	0	0	0
7/10	6B	0	0	0	0	0	0	0	0	0	8	8
7/12	7A	1	2	0	0	0	0	0	0	0	8	16
7/19	7B	1	6	0	0	1	0	0	1	0	14	40
7/8	15A	0	2	0	0	0	0	1	0	0	2	10
7/9	15B	1	2	1	0	1	0	0	0	0	3	18
7/14	16A	1	2	0	0	1	0	0	2	0	21	38
7/15	16B	1	1	0	0	0	0	0	1	0	8	16
7/17	17A	0	0	0	0	0	0	0	0	0	9	9
7/18	17B	0	0	0	0	0	0	0	0	0	8	8
7/13	24	1	0	0	0	2	0	0	0	0	32	40
7/16	25	0	0	0	0	0	0	0	0	0	1	1
6/11	26A	0	0	0	0	0	0	0	0	0	0	0
6/10	26B	0	0	0	0	0	0	0	0	0	0	0
6/20	29	0	0	0	0	0	0	0	0	0	0	0
6/12	30	0	0	0	0	0	0	0	0	0	0	0
6/15	31	0	0	0	0	0	0	0	0	0	0	0
6/20	32	0	0	0	0	0	0	0	0	0	0	0
6/18	33	0	0	0	0	0	0	0	0	0	0	0
6/17	34	0	1	0	0	0	0	0	0	0	0	3
6/16	35	0	0	0	0	0	0	0	0	0	0	0
6/19	36	0	0	0	0	0	0	0	0	0	1	1
6/16	37	0	0	0	0	0	0	0	0	0	0	0
All												
Areas		6	16	1	0	5	0	1	4	0	115	208

For the second round of flights in August 2013, only the northern GBOUs were flown. Comparing Round 1 and Round 2 survey efforts, the number of grizzly bears observed was higher in Round 2 of 2013 (Table 5). More abundant late summer moisture at high elevations created favorable conditions for army cutworm moths during Round 2, which resulted in 241 grizzly bears observed during compared to 145 in 2012. The number of F_{coy} groups doubled during Round 2 of 2013 ($n = 24$) compared to 2012 ($n = 12$), and included one observation of a female with 4 cubs-of-the-year (Table 5).

Table 5. Composition of grizzly bears observed in Round 2 during 2013 observation surveys in Wyoming.

Date	Unit	Females with COY				Females with Yearlings			Females with 2 Year Olds			All Other Grizzly Bears	Total No. Bears Observed
		# of COY	# of Yrlngs	# of 2 Yr Olds									
		1	2	3	4	1	2	3	1	2	3		
8/14	6A	0	0	0	0	0	0	0	0	0	0	0	0
8/14	6B	0	1	0	0	0	1	0	0	0	0	7	13
8/15	7A	1	3	0	0	0	1	0	0	0	0	8	22
8/11	7B	1	7	0	0	0	0	0	0	0	0	21	44
8/12	15A	0	0	0	0	1	1	0	0	0	0	3	8
8/13	15B	1	2	1	1	0	0	0	0	0	0	21	38
8/16	16A	1	1	0	0	0	2	0	0	2	0	22	39
8/19	16B	2	0	0	0	0	0	0	0	1	0	19	26
8/18	17A	0	0	0	0	0	0	0	0	0	0	0	0
8/17	17B	1	0	0	0	0	0	0	0	0	0	6	8
8/7	24	1	0	0	0	0	1	0	0	1	0	29	40
8/20	25	0	0	0	0	0	0	0	0	0	0	3	3
All Areas		8	14	1	1	1	6	0	0	4	0	139	241

It should be noted that these data should not be used independently to determine grizzly bear population status or trends in the number of F_{coy} groups. Not all F_{coy} groups observed will count toward the population estimate until they have been analyzed to determine whether they are unique (non-duplicate) sightings.



MONITORING – MOTH SITE USE BY GRIZZLY BEARS

Taken from: *Grizzly Bear Use of Insect Aggregation Sites Documented from Aerial Telemetry and Observations* (Dan Bjornlie, Wyoming Game and Fish Department; and Mark Haroldson, Interagency Grizzly Bear Study Team)

Army cutworm moths (*Euxoa auxiliaris*) were first recognized as an important food source for grizzly bears in the GYE during the mid 1980s (Mattson et al. 1991b, French et al. 1994). Early observations indicated that moths, and subsequently bears, showed specific site fidelity. These sites are generally high alpine areas dominated by talus and scree adjacent to areas with abundant alpine flowers. Such areas are referred to as “insect aggregation sites.” Since their discovery, numerous bears have been counted on or near these aggregation sites due to excellent sightability from a lack of trees and simultaneous use by multiple bears.

Complete tabulation of grizzly presence at insect sites is extremely difficult. Only a few sites have been investigated by ground reconnaissance and the boundaries of sites are not clearly known. In addition, it is likely that the size and location of insect aggregation sites fluctuate from year to year with moth abundance and variation in environmental factors such as snow cover.

Since 1986, when insect aggregation sites were initially included in aerial observation surveys, our knowledge of these sites has increased annually. Our techniques for monitoring grizzly bear use of these sites have changed in response to this increase in knowledge. Prior to 1997, we delineated insect aggregation sites with convex polygons drawn around locations of bears seen feeding on moths and buffered these polygons by 500 m. However, this technique overlooked small sites due to the inability to create polygons around sites with fewer than 3 locations. From 1997-99, the method for defining insect aggregation sites was to inscribe a 1-km circle around the center of clusters of observations in which bears were seen feeding on insects in talus/scree habitats (Ternent and Haroldson 2000). This method allowed trend in bear use of sites to be annually monitored by recording the number of bears documented in each circle (i.e., site).

A new technique was developed in 2000 (D. Bjornlie, Wyoming Game and Fish Department, personal communication) that delineates sites by buffering only the locations of bears observed actively feeding at insect aggregation sites by 500 m to account for error in aerial telemetry locations. The borders of the overlapping buffers at individual insect sites are dissolved to produce a single polygon for each site. These sites are identified as “confirmed” sites. Because these polygons are only created around feeding locations, the resulting site conforms to the topography of the mountain or ridge top where bears feed and does not include large areas of non-talus habitat that are not suitable for cutworm moths. Locations from the grizzly bear location database from July 1 through September 30 of each year are then overlaid on these polygons and enumerated. The technique to delineate confirmed sites developed in 2000 substantially decreased the number of sites described compared to past years in which locations from both feeding and non-feeding bears were used. Therefore, annual analysis for this report is completed for all years using this technique. Areas suspected as insect aggregation sites but dropped from the confirmed sites list using this technique, as well as sites with only one observation of an actively feeding bear or multiple observations in a single year, are termed “possible” sites and will be monitored in subsequent years for additional observations of actively

feeding bears. These sites may then be added to the confirmed sites list. When possible sites are changed to confirmed sites, analysis is done on all data back to 1986 to determine the historic use of that site. Therefore, the number of bears using insect aggregation sites in past years may change as new sites are added, and data from this annual report may not match that of past reports. In addition, as new actively feeding bear observations are added to existing sites, the polygons defining these sites increase in size and, thus, more overlaid locations fall within the site. This retrospective analysis brings us closer each year to the “true” number of bears using insect aggregation sites in past years.

In 2013, there was 1 observation of a grizzly bear actively feeding on a possible site, which resulted in the reclassification of that site to confirmed. In addition, analysis of confirmed sites for 2013 resulted in the merging of 2 previously separate sites. Adding the new confirmed site and merging 2 confirmed sites produced 37 confirmed sites and 16 possible sites for 2013.

The percentage of confirmed sites with documented use by bears varies from year to year, suggesting that some years have higher moth activity than others (Fig. 2). For example, 1993 was probably a poor moth year because the percentage of confirmed sites used by bears (Fig. 2) and the number of observations recorded at insect sites (Table 6) were low. The percentage of insect aggregation sites used by grizzly bears remained at 70% in 2013 (Fig. 2). The total number of grizzly bear observations or telemetry relocations at sites in 2013 ($n = 317$) was the highest recorded since moth site monitoring began (Table 6). The recent increase in reported observations of grizzly bears using insect aggregation sites from a few ground-based observers resulted in the need to censor locations from recent years to prevent a bias in comparisons to previous years. Therefore, the number of aerial and ground observations from Table 6 may differ from previous annual reports.

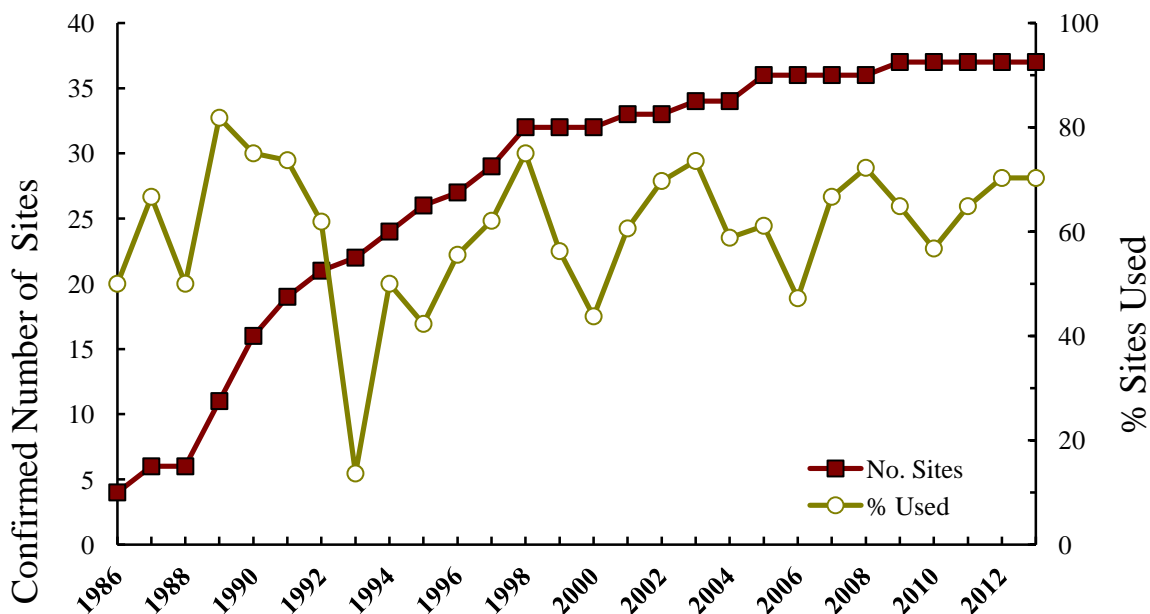


Figure 2. Annual number of confirmed insect aggregation sites and percent of those sites at which either telemetry relocations of marked bears or visual observations of unmarked bears were recorded, Greater Yellowstone Ecosystem, 1986-2013.

Table 6. The number of confirmed insect aggregation sites in the Greater Yellowstone Ecosystem annually, the number used by bears, and the total number of aerial telemetry relocations and ground or aerial observations of bears recorded at sites during 1986-2013.

Year	Number of confirmed moth sites ^a	Number of sites used ^b	Number of aerial telemetry relocations	Number of ground or aerial observations
1986	4	2	5	5
1987	6	4	7	8
1988	6	3	12	29
1989	11	9	11	42
1990	16	12	8	77
1991	19	14	12	166
1992	21	13	6	103
1993	22	3	1	2
1994	24	12	1	29
1995	26	11	7	39
1996	27	15	21	66
1997	29	18	18	79
1998	32	24	11	177
1999	32	18	25	156
2000	32	14	44	92
2001	33	20	25	124
2002	33	23	38	243
2003	34	25	10	161
2004	34	20	2	132
2005	36	22	17	189
2006	36	17	18	140
2007	36	24	20	159
2008	36	26	24	174
2009	37	24	9	162
2010	37	21	4	129
2011	37	24	10	155
2012	37	26	22	238
2013	37	26	31	286
Total			419	3362

^a The year of discovery was considered the first year a telemetry location or aerial observation was documented at a site. Sites were considered confirmed after additional locations or observations in a subsequent year and every year thereafter regardless of whether or not additional locations were documented.

^b A site was considered used if ≥ 1 location or observation was documented within the site that year.

The IGBST maintains an annual list of unduplicated females observed with COY. Since 1986, 965 initial sightings of unduplicated females with COY have been recorded, of which 257 (26.6%) have occurred at (within 500 m, $n = 240$) or near (within 1,500 m, $n = 17$) insect aggregation sites (Table 7). In 2013, 14 of the 58 (24.1%) initial sightings of unduplicated females with COY were observed at insect aggregation sites, slightly below the 26.5% from 2012 (Table 7), but higher than the 5-year mean of 20.3% from 2008-2012.

Survey flights at or near (within 1,500 m) insect aggregation sites contribute to the count of unduplicated females with COY; however, it is typically low, with a 10-year mean of 12.1 initial sightings/year since 2004 (Table 7). If these sightings are excluded, a similar trend in the annual number of unduplicated sightings of females with COY is still evident (Fig. 3), suggesting that other factors besides observation effort at insect aggregation sites are responsible for the increase in sightings of females with cubs.



Table 7. Number of initial sightings of unduplicated females with cubs-of-the-year (COY) that occurred on or near insect aggregation sites, number of sites where such sightings were documented, and the mean number of sightings per site in the Greater Yellowstone Ecosystem, 1986-2013.

	Unduplicated females with COY ^a	Number of moth sites with an initial sighting ^b	Initial sightings			
			Within 500 m ^b		Within 1,500 m ^c	
				%		%
1986	25	0	0	0.0	0	0.0
1987	13	0	0	0.0	0	0.0
1988	19	1	2	10.5	2	10.5
1989	16	1	1	6.3	1	6.3
1990	25	3	3	12.0	4	16.0
1991	24	8	12	50.0	14	58.3
1992	25	5	7	28.0	9	36.0
1993	20	1	1	5.0	1	5.0
1994	20	3	5	25.0	5	25.0
1995	17	2	2	11.8	2	11.8
1996	33	7	7	21.2	7	21.2
1997	31	8	11	35.5	11	35.5
1998	35	10	13	37.1	13	37.1
1999	33	3	6	18.2	7	21.2
2000	37	6	8	21.6	10	27.0
2001	42	6	12	28.6	13	31.0
2002	52	11	17	32.7	17	32.7
2003	38	11	19	50.0	20	52.6
2004	49	11	16	32.7	16	32.7
2005	31	5	7	22.6	9	29.0
2006	47	11	14	29.8	15	31.9
2007	50	10	17	34.0	17	34.0
2008	44	7	11	25.0	14	31.8
2009	42	4	6	14.3	6	14.3
2010	51	7	9	17.6	9	17.6
2011	39	7	7	17.9	7	17.9
2012	49	7	13	26.5	13	26.5
2013	58	8	14	24.1	15	25.9
Total	965		240		257	
Mean	34.5	5.8	8.6	22.6	9.2	24.6

^a Initial sightings of unduplicated females with COY; see Table 4.

^b Insect aggregation site is defined as a 500-m buffer drawn around a cluster of observations of bears actively feeding.

^c This distance is 3 times what is defined as an insect aggregation site for this analysis, since some observations could be made of bears traveling to and from insect aggregation sites.

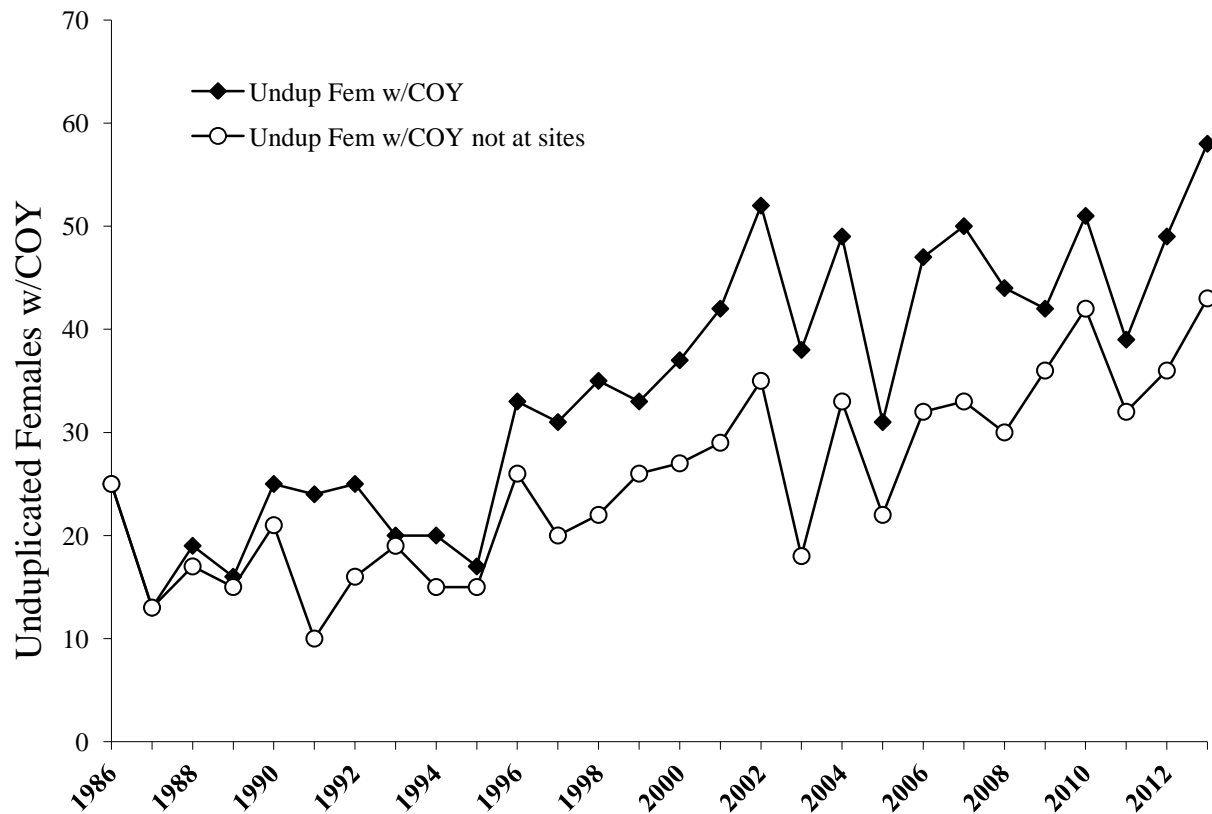


Figure 3. The total number of unduplicated females with COY observed annually in the Greater Yellowstone Ecosystem and the number of unduplicated females with COY not found within 1500m of known insect aggregation sites, 1986-2013.



RELEVANT PUBLICATIONS

Personnel with the Department's Large Carnivore Section were authors of multiple peer-reviewed research papers on grizzly bear ecology that were completed and submitted for publication in 2013. They were subsequently published in early 2014.

Methods to estimate distribution and range extent of grizzly bears in the Greater Yellowstone Ecosystem.

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ABSTRACT The distribution of the Greater Yellowstone Ecosystem grizzly bear (*Ursus arctos*) population has expanded into areas unoccupied since the early 20th century. Up-to-date information on the area and extent of this distribution is crucial for federal, state, and tribal wildlife and land managers to make informed decisions regarding grizzly bear management. The most recent estimate of grizzly bear distribution (2004) utilized fixed-kernel density estimators to describe distribution. This method was complex and computationally time consuming and excluded observations of unmarked bears. Our objective was to develop a technique to estimate grizzly bear distribution that would allow for the use of all verified grizzly bear location data, as well as provide the simplicity to be updated more frequently. We placed all verified grizzly bear locations from all sources from 1990 to 2004 and 1990 to 2010 onto a 3-km × 3-km grid and used zonal analysis and ordinary kriging to develop a predicted surface of grizzly bear distribution. We compared the area and extent of the 2004 kriging surface with the previous 2004 effort and evaluated changes in grizzly bear distribution from 2004 to 2010. The 2004 kriging surface was 2.4% smaller than the previous fixed-kernel estimate, but more closely represented the data. Grizzly bear distribution increased 38.3% from 2004 to 2010, with most expansion in the northern and southern regions of the range. This technique can be used to provide a current estimate of grizzly bear distribution for management and conservation applications.

Wildlife Society Bulletin. 38:182–187; (doi:10.1002/wsb.368).

Whitebark pine, population density, and home-range size of grizzly bears in the Greater Yellowstone Ecosystem

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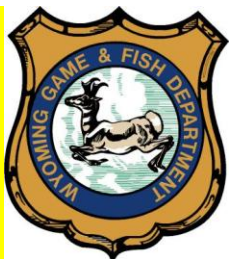
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Changes in life history traits of species can be an important indicator of potential factors influencing populations. For grizzly bears (*Ursus arctos*) in the Greater Yellowstone Ecosystem (GYE), recent decline of whitebark pine (WBP; *Pinus albicaulis*), an important fall food resource, has been paired with a slowing of population growth following two decades of robust population increase. These observations have raised questions whether resource decline or density-dependent processes may be associated with changes in population growth. Distinguishing these effects based on changes in demographic rates can be difficult. However, unlike the parallel demographic responses expected from both decreasing food availability and increasing population density, we hypothesized opposing behavioral responses of grizzly bears with regard to changes in home-range size. We used the dynamic changes in food resources and population density of grizzly bears as a natural experiment to examine hypotheses regarding these potentially competing influences on grizzly bear home-range size. We found that home-range size did not increase during the period of whitebark pine decline and was not related to proportion of whitebark pine in home ranges. However, female home-range size was negatively associated with an index of population density. Our data indicate that home-range size of grizzly bears in the GYE is not associated with availability of WBP, and, for female grizzly bears, increasing population density may constrain home-range size.

PlosOne 9(2): e88160. (doi:10.1371/journal.pone.0088160).

FEDERAL FUNDING – SECTION 6

	<p>ENDANGERED SPECIES</p> <p>SECTION 6 FUNDING PROPOSAL FY14</p> <p>PROGRAM NARRATIVE STATEMENT</p> <p>WYOMING</p> <p>E-1-95</p>
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Title:	Grizzly Bear Recovery and Conservation
Total Cost:	\$70,000 (\$70,000 USFWS and \$23,333.34 WGFD match) - This includes temporary personnel, salaries, supplies, travel, surveys, and education efforts.
Time Period:	July 1, 2013 – June 30, 2014
Project Leader:	<p>Daniel Thompson, Large Carnivore Section Supervisor 2820 State Hwy. 120, Cody, WY 82414</p> <p>Dustin Lasseter, Bearwise Coordinator (Carcass Management Program) 2820 State Hwy. 120, Cody, WY 82414</p>
Location:	The program area encompasses all areas within the state of Wyoming in the Yellowstone Ecosystem outside of Yellowstone and Grand Teton National Parks. Additional activities may be completed within Yellowstone and Grand Teton National Parks in conjunction with the National Parks. Coordination also occurs between the WGFD and appropriate National Forests, Bureau of Land Management, U.S. Fish and Wildlife Service, and state lands as required.
Need:	<p>The Department's grizzly bear program involves research and management projects designed to determine various population characteristics and habitat use of grizzly bears in the southern third of the Yellowstone Ecosystem and to manage grizzly bear/livestock and grizzly bear/human interactions. Management programs are directed towards monitoring the grizzly bear population trend through observation flights that define the distribution of grizzly bears within bear management units (BMUs), document females with cubs of the year, and detailed monitoring of radio-collared individuals to assess important movement, seasonal habitat use, food selection, and survival estimates.</p> <p>Due to the long-lived, wide-ranging characteristics of grizzly bears, adequate information is needed for sound management decisions. Additional data will be needed to show trends in grizzly bear activities associated with road construction, timber management, mineral development, and cattle grazing in the southern BMUs, especially in areas outside the recovery area which are</p>

	<p>presently occupied by grizzly bears.</p> <p>The state currently funds one seasonal trap personnel; however, additional funds are requested for 1 additional person to assist in trapping grizzly bears and conducting surveys to document distribution and expansion of the population into the Wyoming Range and the southern portions of the Wind River Range. The state will fund the necessary training, supplies, travel, vehicles, and other associated equipment for these positions.</p> <p>Priority conflict efforts include responding to all bear conflict complaints. All known mortalities are investigated in cooperation with the U.S. Fish and Wildlife Service-Law Enforcement. Bears involved in conflicts will be trapped, relocated, or removed as required. Grizzly bear/human conflict management will continue to be a high priority during recovery and management of the Yellowstone area grizzly bear population. Conflict management is essential to reducing human caused bear mortalities and maintaining public support of recovery efforts. Section 6 funds are needed to assist with local working groups that assist with public awareness of bear safety and conflict prevention issues. Section 6 funding has previously been used to offset some of the costs for radio collars and aerial surveys, including telemetry flights to determine grizzly bear locations. Without section 6 funding, manpower, population and habitat data collection, and response rates to manage nuisance grizzly bears would be decreased. Previous allocations of Section 6 funds have not adequately covered the costs of the above items, which may hinder data collection to assure that monitoring is completed as described in the Yellowstone Grizzly Bear Conservation Strategy (CS). Additional funds are required to assure that aerial relocation schedules can be maintained.</p>
Objectives:	<ol style="list-style-type: none"> 1) Assist the Interagency Grizzly Bear Study Team (IGBST) in determining food habits, habitat use, distribution, population trend, allowable mortality thresholds, and other important parameters for grizzly bears within the southern BMUs, 2) Provide comparative data to that already gathered by the IGBST, Idaho, and Montana, 3) Manage bear/human interaction, bear/livestock interaction and mortality data specific for each BMU to aid state and federal managers in minimizing human caused mortalities and grizzly bear conflicts. 4) Continue to provide important information and educational efforts to assist with bear conservation and safety issues, distribute information to hunters and other publics on bear safety, support a section on “Hunting in Bear Country” in statewide Hunter Education efforts, and continue to conduct numerous workshops on how to live safely in areas occupied by bears.
Approach:	1) <u>Trapping and Handling</u>

	<p>Bears will be captured using Aldrich foot snares and trailer mounted box traps. Each animal will be ear tagged, lip tattooed for later identification, and fitted with a radio-collar. All collars are modified to fall off within 2 years using cotton spacers.</p> <p>Research-trapping efforts for grizzly bears are to be conducted on the Shoshone (SNF) and Bridger Teton (BTNF) National Forests, as well as BLM and private lands, as required. Trapping schedules are developed jointly with the IGBST to assure adequate coverage outside the National Parks so that sampling and home range analysis corresponds to known grizzly bear distribution.</p> <p>2) <u>Telemetry and Home Range Analysis</u> Bear locations will be determined using fixed wing aircraft, along with intensive sampling from the ground. The home ranges of collared animals will be calculated using the Harmonic Mean method.</p> <p>3) <u>Grizzly Bear/Livestock Interactions</u> Grizzly Bear/livestock interactions will be managed as per the “Interagency Grizzly Bear Guidelines” and appropriate state and Federal laws and regulations.</p> <p>4) <u>Annual Data Collection</u> Locations of radio-collared grizzly bears will be monitored with aerial flights. Cattle carcasses in the study area will also be investigated to determine cause of death. Detailed biological and physiological data will be gathered on each bear captured.</p> <p>5) <u>Grizzly Bear/Human Interactions</u> The Department will continue to evaluate all bear/human interactions and take appropriate management actions in accordance with "Interagency Grizzly Bear Guidelines".</p> <p>6) <u>Multi-Agency Effort</u> The CS has objectives for data collection to assure that the population status and other indices to recovery can be annually assessed for this population. This requires that several agencies work cooperatively to meet these goals. As a result, the states of Idaho, Montana, and Wyoming along with several federal agencies, share in the data collection and analysis of that data. All of the affected agencies, both state and federal, have signed the CS and have committed to collecting the information necessary to manage this population into the future.</p>
Expected Results:	<p>The goal of this program is to capture and radio-collar grizzly bears to provide an even distribution of radio-collared grizzly bears and to enhance annual life history data of grizzly bears occupying new regions of the</p>

	<p>Yellowstone Ecosystem outside the Recovery Area. Without this data, survival rates by age and sex will be compromised as data will only be available from a portion of the ecosystem.</p> <p>Observation flights are a key component of the annual data collection scheme. Section 6 funding would assure that adequate coverage of all occupied habitat is surveyed. New techniques may be investigated as warranted to test timing and frequency of these flights. Results would assist in providing a more accurate estimate of females with COY that is used to establish the population estimate. These funds will assure that data collection is consistent across the entire ecosystem, which is required to accurately assess the status of several population parameters.</p> <p>These funds will also assure that conflicts between grizzly bears and humans will be managed in a timely and consistent process. The number of conflicts continues to increase in Wyoming's portion of the ecosystem.</p> <p>With additional funding, the Department's Information and Education efforts can be increased to assure that larger segments of the public are contacted to increase their awareness of how to recreate and live in occupied grizzly bear habitat.</p>
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FINANCIAL REQUEST:

	TOTAL	FEDERAL	STATE
Contracts: Aerial Telemetry & Observation Flights	\$18,666.80	\$14,000	\$4,666.80
Contracts: Livestock Carcass Management	\$13,000	\$13,000	
Field Supplies: Radio Collars, Supplies, Travel, Repairs	\$ 32,267.20	\$13,600	\$18,667.20
Personnel: (AWEC/Temp personnel)	\$22,400	\$22,400	
Information/Education: Supplies	\$7,000	\$7,000	
TOTAL:	\$93,334	\$70,000	\$23,334

GRIZZLY BEAR CONFLICT MANAGEMENT

Introduction

Human-bear interactions and conflicts in Wyoming are typically a result of bears seeking unnatural foods in association with people and property, close encounters with humans, or when bears kill livestock. The number and location of human-bear conflicts is influenced by unsecured unnatural attractants (e.g. human foods and garbage), natural food distribution and abundance, bear numbers and distribution, and human and livestock use patterns on the landscape.

The management technique of capturing bears in areas where they may come into conflict with people and relocating them to remote locations is a common practice throughout the world. Relocating bears achieves several social and conservation functions: (a) reduces the chance of property damage, livestock damage, or human interactions in areas where the potential for conflict is high; (b) reduces the potential for bears to become food conditioned and/or human habituated which often results in destructive and/or dangerous behaviors; (c) allows bears the opportunity to forage on natural foods and remain wary of people; and (d) could prevent removing bears from the population which may be beneficial in meeting population management objectives.

The Wyoming Game and Fish Department relocates and removes black and grizzly bears as part of routine management operations. The decision to relocate or remove a bear is made after considering a number of variables including age and sex of the animal, behavioral traits, health status, physical injuries or abnormalities, type of conflict, severity of conflict, known history of the animal, human safety concerns, and population management objectives. Grizzly bears are relocated in accordance with state and federal law, regulation, and policy.

In 2005 the Wyoming Legislature created Wyoming Statute §23-1-1001 as follows:

(a) Upon relocating a grizzly bear or upon receiving notification that a grizzly bear is being relocated, the department shall provide notification to the county sheriff of the county to which the grizzly bear is relocated within five (5) days of each grizzly bear relocation and shall issue a press release to the media and sheriff in the county where each grizzly bear is relocated;

(b) The notice and press release shall provide the following information:

- (i) The date of the grizzly bear relocation;
- (ii) The number of grizzly bears relocated; and
- (iii) The location of the grizzly bear relocation, as provided by commission rule and regulation;

(c) No later than January 15 of each year the department shall submit an annual report to the Joint Travel, Recreation, Wildlife, and Cultural Resources Interim committee. The annual report shall include the total number and relocation area of each grizzly bear relocated during

the previous calendar year. The department shall also make available the annual report to the public.

Subsequently, the Wyoming Game and Fish Commission promulgated regulations in Chapter 58 of the Wyoming Game and Fish Commission to further direct the implementation of W.S. §23-1-1001 as follows:

Section 1. Authority. This regulation is promulgated by authority of W.S. §23-1-1001.

Section 2. Regulation. The Wyoming Game and Fish Commission hereby adopts the following regulation governing notification to the County Sheriff and the media of grizzly bear relocations in the State of Wyoming. This regulation shall remain in effect until modified or rescinded by the Commission.

Section 3. Definitions. For the purpose of this regulation, definitions shall be as set forth in Title 23, Wyoming Statutes and the Commission also adopts the following definitions:

(a) "County Sheriff" means the County Sheriff's Office in the county where a grizzly bear is relocated.

(b) "Location of the grizzly bear relocation" means the proper name of the drainage in which a grizzly bear is relocated and the estimated number of miles from the relocation site to the nearest municipality, topographical feature or geographic location.

(c) "Provide a press release" means the department shall provide to the County Sheriff and the media in the county in which a grizzly bear is relocated, a press release including the location of the grizzly bear relocation, number of grizzly bears relocated, date of the relocation and the reason the grizzly bear was relocated.

Section 4. Notification of relocation.

(a) Upon relocating a grizzly bear or upon receiving notification that a grizzly bear is being relocated, the department shall notify the County Sheriff of the date, number of grizzly bears relocated, the location of the grizzly bear relocation and the reason of the relocation via direct telephone conversation, written or electronic correspondence, or personal contact within five (5) days of the date of the relocation. The department shall provide a press release to the County Sheriff and the media in the county where a grizzly bear is relocated of the date, number of grizzly bears relocated, the location of the grizzly bear relocation and the reason of the relocation within five (5) days of the date of relocation of any grizzly bear.

Section 5. Savings Clause. If any provision of this regulation is held to be illegal or unconstitutional, such a ruling shall not affect other provisions of this regulation which can be given effect without the illegal or unconstitutional provision; and, to this end the provisions of this regulation are severable.

WYOMING GAME AND FISH COMMISSION

By: Linda Fleming, President

Dated: July 12, 2005

CONFLICT MANAGEMENT – CAPTURE, HANDLING, AND RELOCATION

During 2013, the Wyoming Game and Fish Department captured 26 grizzly bears in 27 capture events in an attempt to prevent or resolve conflicts (Figure 4). Most individuals were lone grizzly bears, but 1 family group (1 female with 2 yearlings) was also captured. Of the 27 capture events, 15 (56%) occurred in Park County, 6 (22%) in Sublette County, 3 (11%) in Hot Springs County, two (7%) in Fremont County, one (4%) in Grand Teton National Park (GTNP), and zero in Teton County (Table 8). A lone subadult male (#760) was captured by GTNP personnel and was moved to the Boone Creek drainage in Teton County after being caught for frequenting a campground.

Of the 27 capture events, 18 involved grizzly bears that were relocated from areas preemptively to avoid conflicts or where they were causing property damage, obtained garbage or some non-natural food such as pet food or livestock grain, or a combination of these factors. Thirteen captures were a result of grizzly bears killing livestock, primarily cattle. One management capture was a non-target yearling grizzly bear released on site in Sublette County.

Eight of the 27 capture events resulted in the removal of grizzly bears from the population by agency personnel due to a history of previous conflicts, a known history of close association with humans, or they were deemed unsuitable for release into the wild (i.e., orphaned cubs, poor physical condition, or human safety concern). All relocated grizzly bears were released on U.S. Forest Service lands in or adjacent to the Grizzly Bear Recovery Zone (RZ) (Figure 5). Of the 18 relocation events, 8 (44%) bears were released in Park County, 5 (28%) were released in Teton County, and 5 (28%) were released in Fremont County (Table 8).

All independent grizzly bears greater than 2 years old that were relocated were fitted with a radio-tracking collar ($n=14$) to track their movements after release. Attempts to obtain location data via aerial telemetry were made approximately every 10-14 days.

Notification to the County Sheriff and the Media

Within 5-days of releasing a grizzly bear, the County Sheriff was notified by e-mail and a press release was distributed to all local media contacts in the county where the grizzly bear was released. The media release contained information on the location of the grizzly bear release, the number of grizzly bears relocated, the date of the relocation and the reason the grizzly bear was relocated (Table 8).

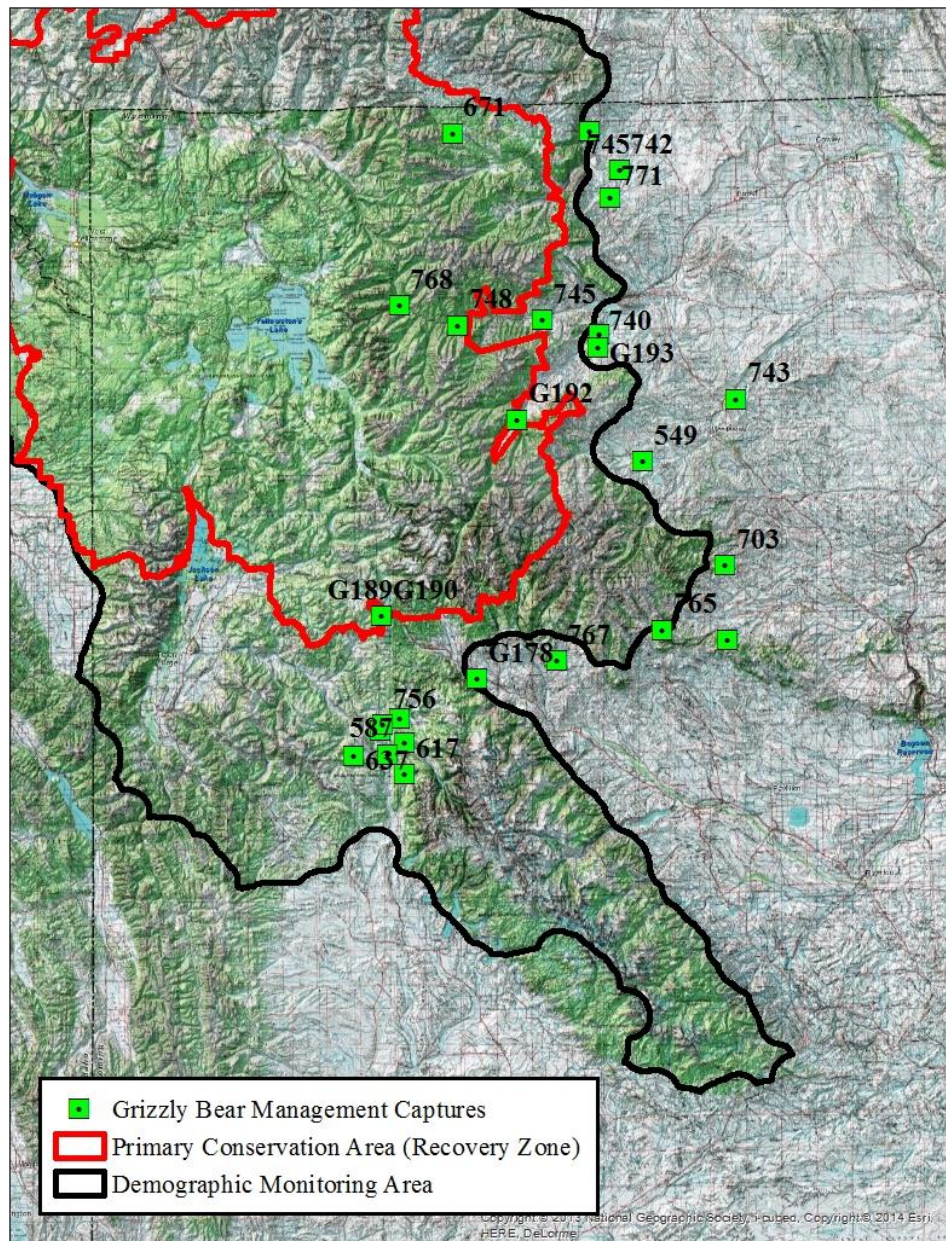


Figure 4. Management capture locations ($n=27$) for grizzly bears captured, relocated, released, or removed in 2013. Grizzly bears with “G” in front of their number were marked but not wearing radio collars upon release typically because they were too young to be collared. Grizzly bears identified with “NA” were grizzly bears removed from the population without being given an identification number. The “unk” label is the yearling non-target capture released on site.

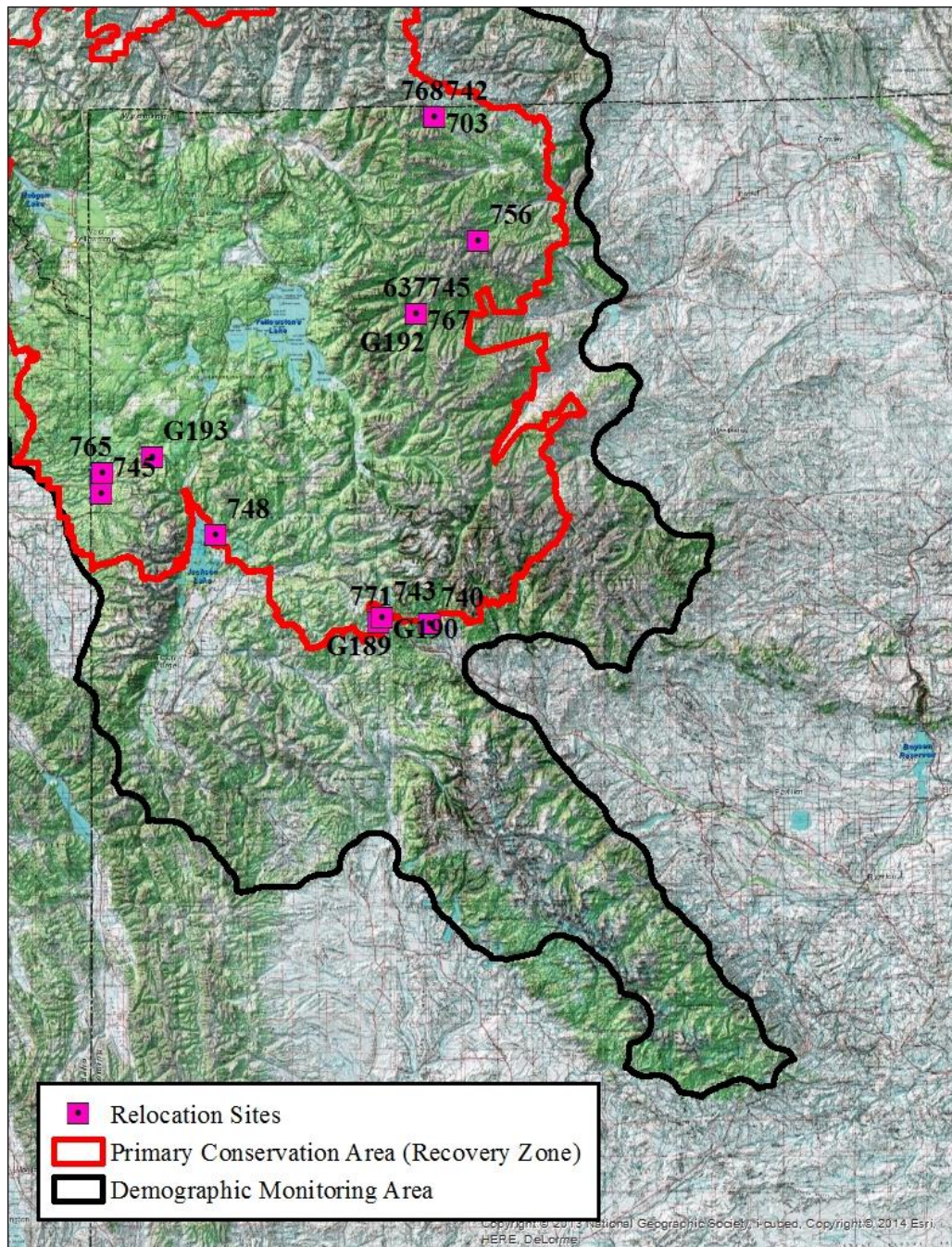


Figure 5. Release locations ($n=18$) for grizzly bears captured, relocated, or released on site in conflict management efforts 2013. Grizzly bears with “G” in front of their number were marked but not wearing radio collars upon release typically because they were too young to be collared.

Table 8. Capture date, grizzly bear identification number (ID), capture county, relocation site, release county, and reason for capture for all 2013 grizzly bear conflict management captures ($N = 27$) in Wyoming.

DATE	ID	Capture county	Relocation Site	Relocation County	REMARKS
3/23/2013	N/A	Park	N\A		Cattle Depredation
4/25/2013	671	Park	N\A		Garbage
5/6/2013	740	Park	Long Creek	Fremont	Cattle Depredation
5/6/2013	549	Park	N\A		Cattle Depredation
5/24/2013	742	Park	Mormon Creek	Park	Frequenting a calving pasture and aggressive behavior
5/25/2013	743	Park	Togwotee Pass	Fremont	Preemptive, from east of Hwy 120, frequenting agricultural areas
5/25/2013	G189	Park	Togwotee Pass	Fremont	Preemptive, from east of Hwy 120, frequenting agricultural areas
5/25/2013	G190	Park	Togwotee Pass	Fremont	Preemptive, from east of Hwy 120, frequenting agricultural areas
5/31/2013	745	Park	Mormon Creek	Park	Preemptive for frequenting calving pasture
6/7/2013	748	Park	Bailey Creek	Teton	Frequenting a campground
6/8/2013	G192	Park	Mormon Creek	Park	Frequenting a housing area
6/30/2013	756	Sublette	Sunlight Creek	Park	Cattle Depredation
7/7/2013	587	Sublette	N\A		Cattle Depredation
7/8/2013	714	Sublette	N\A		Cattle Depredation
7/23/2013	N/A	Hot Springs	N\A		Cattle and sheep depredation
7/28/2013	745	Park	Squirrel Creek	Teton	Garbage and frequenting a guest ranch
7/30/2013	760	GTNP	Boone Creek	Teton	Frequenting campground in GTNP
8/6/2013	637	Sublette	Mormon Creek	Park	Cattle Depredation
8/10/2013	unk	Sublette	N\A		Non-target at cattle depredation site
9/5/2013	G178	Fremont	N\A		Garbage, birdseed, and dog food at residences

9/10/2013	765	Hot Springs	Boone Creek	Teton	Cattle depredation
9/14/2013	717	Sublette	N\A		Cattle Depredation
9/23/2013	767	Fremont	Mormon Creek	Park	Cattle Depredation
9/27/2013	768	Park	Fox Creek	Park	Frequenting a resort lodge and restaurant
10/1/2013	703	Hot Springs	Fox Creek	Park	Grain at a cow camp, possible cattle depredation
10/9/2013	771	Park	Togwotee Pass	Fremont	Frequenting ranch buildings
10/14/2013	G193	Park	Grassy Lake	Teton	Damaging apple trees at residence

CONFLICT MANAGEMENT – CONFLICT VERIFICATION AND REPORTING

Department personnel investigated and recorded 152 human-grizzly bear conflicts in 2013 (Table 9). This year was marked by dry conditions throughout the summer followed by abundant precipitation during the fall. As a result, overall annual vegetal food and berry availability throughout the state was very good. Verified documentation of grizzly bears and conflicts continues to be observed in areas further from the Recovery Zone as noted in previous years (Figure 8), and despite the expansion and resultant potential for conflicts, during 2013 verified conflicts were distributed among private and public lands evenly (Figure 7).

Table 9. Type and Number of Human-Grizzly Bear Conflicts in Wyoming, 2013.

Conflict Type	Number	Approx. Percent(%)
Aggression toward Human	5	3.3
Human Caused Grizzly Death	3	2.0
Human Caused Grizzly Injury	1	0.7
Beehive	2	1.3
Cattle	108	71.1
Garbage	9	5.9
Horse	0	0.0
Human Death	0	0.0
Human Injury	1	0.7
Other (Pet/Livestock/Bird Feeder)	11	7.2
Pet/Guard Animal	0	0.0
Poultry	0	0.0
Properly Stored Game Meat	1	0.7
Property Damage	6	3.9
Sheep	3	2.0
Swine	0	0.0
Unsecured Attractant	2	1.3
Total	152	100



Figure 6. Number of Human-Grizzly Bear Conflicts documented in Wyoming, 2008 - 2013.

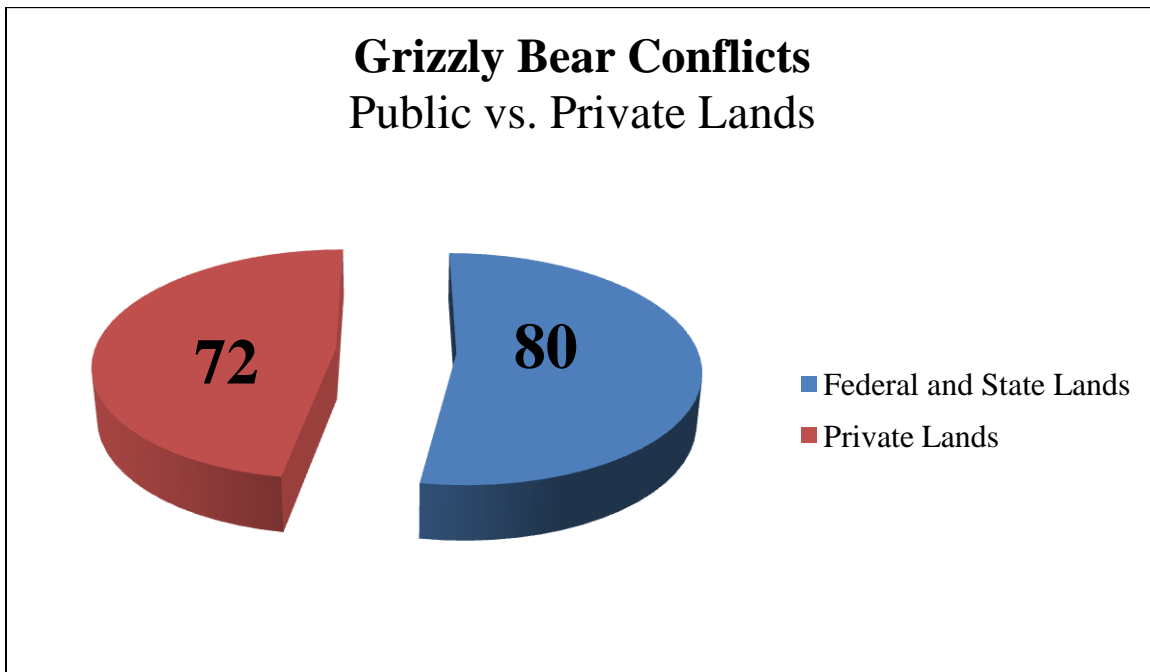


Figure 7. Number of Human-Grizzly Bear Conflicts on Private and Public Lands in Wyoming, 2013. Conflicts occurred at similar rates on private lands (47%) versus lands administered by the State or Federal government (53%).

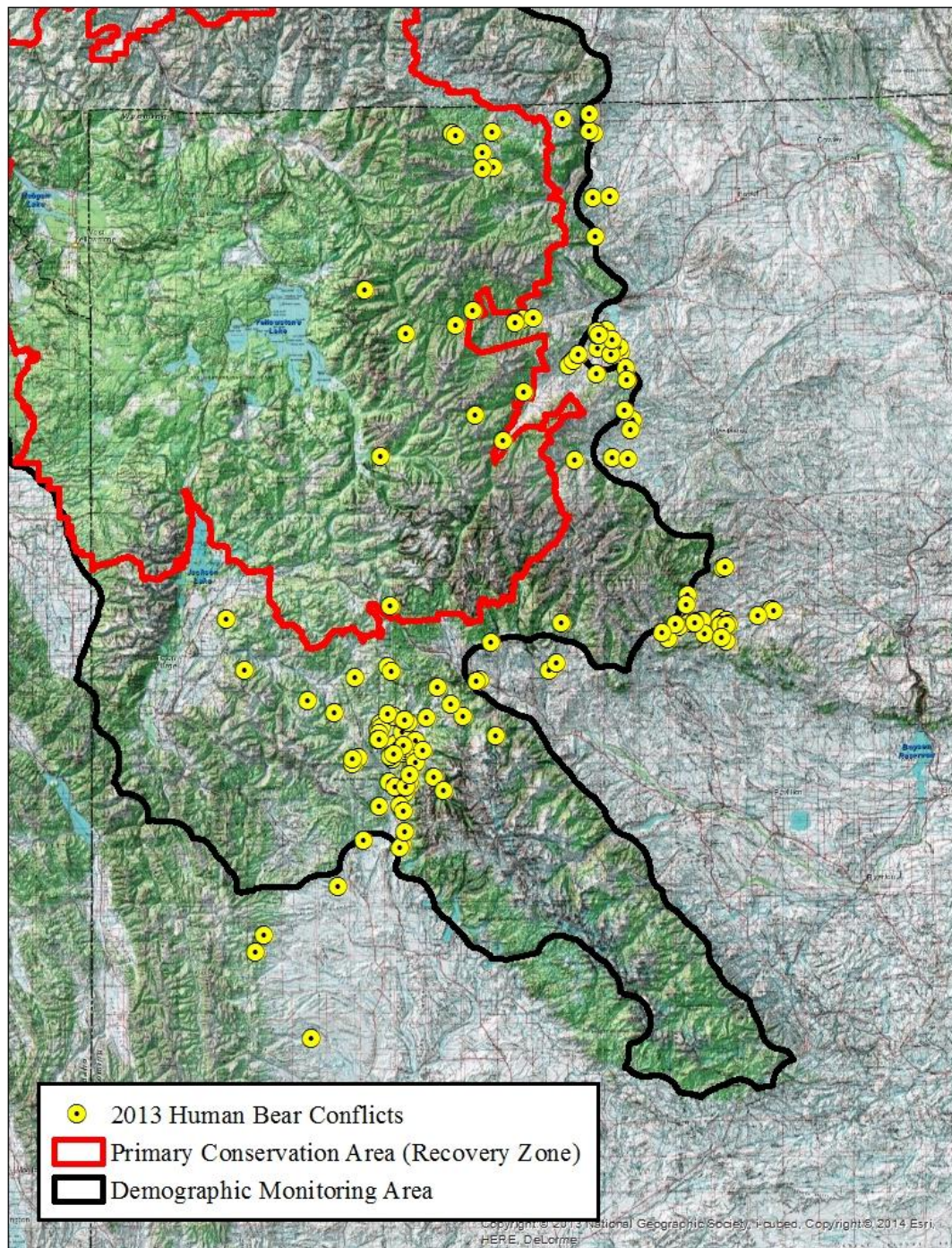


Figure 8. Location of human-grizzly bear conflicts in Wyoming outside of National Parks ($n = 152$) in relation to the Recovery Zone Boundary, Wyoming, 2013. The majority (92%) of documented conflicts in Wyoming occurred outside of the Recovery Zone.

MONITORING AND CONFLICT MANAGEMENT – GRIZZLY BEAR MORTALITIES

Within Wyoming, outside of the National Parks and Wind River Reservation, there were 17 known or probable human-caused grizzly bear mortalities in 2013. Twelve of the mortalities occurred on public lands administered by the U.S. Forest Service.

Types of Mortalities

Management removals accounted for 9 mortalities in 2013. Of the 9 grizzly bears removed in management actions, 8 were removed due to livestock depredations and 1 due to property damage and human food rewards. In addition to the 9 management removals, 1 grizzly bear was killed by another grizzly bear, 1 was found dead of apparent natural causes, 2 were self-defense killings, and 4 mortalities are under investigation by law enforcement.

Mortality Trends

With the grizzly bear population expanding in both number and distribution into areas of high human activity, Wyoming has documented an increasing trend in conflicts and associated human-caused mortality. Short-term annual variation of mortality rates is a function of annual natural food abundance.

Discussion of Mortalities

Most grizzly bear-human conflicts in Wyoming were a result of domestic livestock depredations and food rewards from humans in the form of garbage or pet and livestock feed. Conflicts, and the resulting capture, relocation, and removal of grizzly bears in WY are generally increasing; however during 2013 the Department did have reduced captures and relocations in comparison to 2011-2012. As mentioned earlier, this overall trend is a result of grizzly bears increasing in numbers and distribution into areas used by humans, both on public and private lands. As this GYE grizzly bear population grows and expansion of distribution continues, bears are likely to encounter food sources such as livestock and livestock feed, garbage, and pet food resulting in increased property damage and threats to human safety. Conflict prevention measures such as attractant storage, deterrence, and education are the highest priority for the WGFD. In general, there is an inverse relationship between social tolerance and biological suitability for bear occupancy in areas further from the Recovery Zone due to development, land use patterns, and various forms of recreation. Although prevention is the preferred option to reduce conflicts, each situation is managed on a case-by-case basis using education, securing of attractants, relocation or removal of individual bears, and/or a combination of methods.

2013 WYOMING BEAR WISE COMMUNITY PROJECT UPDATE

Introduction

The Bear Wise Community Program is a proactive initiative that seeks to minimize human-bear (black and grizzly) conflicts, minimize management-related bear mortalities associated with preventable conflicts, and safeguard human communities in northwest Wyoming. The overall objective of Bear Wise is to promote individual and community ownership of the ever-increasing human-bear conflict issue and eventually, create a social conscience regarding responsible

attractant management and behavior in bear habitat. This project seeks to raise awareness and proactively influence local waste management infrastructures with the specific intent of preventing conflicts from recurring. Strategies used to meet the campaign's objectives are: 1) minimize accessibility of unnatural attractants to bears in developed areas; 2) employ a public outreach and education campaign to reduce knowledge gaps about bears and the causes of conflicts; and 3) employ a bear resistant waste management system and promote bear-resistant waste management infrastructure.

This report provides a summary of program accomplishments in 2013. Past accomplishments are reported in the 2006 - 2012 annual reports of the IGBST.

Background

In 2004, a subcommittee of the IGBST conducted an analysis of causes and spatial distribution of grizzly bear mortalities and conflicts in the GYA for the period of 1994–2003. The analysis identified that the majority of known, human-caused grizzly bear mortalities occurred due to agency management actions in response to conflicts (34%), self defense killings, primarily by big game hunters (20%), and vandal killings (11%). The report made 33 recommendations to reduce human-grizzly bear conflicts and mortalities with focus on 3 actions that could be positively influenced by agency resources and personnel: 1) reduce conflicts at developed sites; 2) reduce self-defense killings; and 3) reduce vandal killings (Servheen et al. 2004).

To address action number 1, the committee recommended that a demonstration area be established to focus proactive, innovative, and enhanced management strategies where developed site conflicts and agency management actions resulting in relocation or removal of grizzly bears had historically been high. Spatial examination of conflicts identified the Wapiti area in northwest Wyoming as having one of the highest concentrations of black bear and grizzly bear conflicts in the GYA. The North Fork of the Shoshone River west of Cody was then chosen as the first area composed primarily of private land to have a multi-agency/public approach to reducing conflicts at developed sites.

In 2005, the Department began implementation of the Bear Wise Community Program. Although the program's efforts were focused primarily in the Wapiti area, the Department initiated a smaller scale project in Teton County to address the increasing number of black and grizzly bear conflicts in the Jackson area. For the last 7 years, the Bear Wise Community Programs in both Cody and Jackson have deployed a multi-faceted education and outreach campaign in an effort to minimize human-bear conflicts and promote proper attractant management. Although a wide array of challenges remain and vary between communities, many accomplishments have been made and progress is expected to continue as Bear Wise efforts gain momentum.

Wapiti Project Update

The Wapiti Bear Wise Community Program continues to utilize radio, television and print media, mass mailings, and the use of signing on private and public land to convey the educational messages surrounding human-bear conflict prevention. Conflict prevention information is also disseminated through public workshops and presentations and by contact with

local community groups, governments, the public school system, and various youth organizations. To compliment educational initiatives, the program uses an extensive outreach campaign that assists the community in obtaining and utilizing bear-resistant products and implementing other practical methods of attractant management. Ongoing efforts and new accomplishments for 2013 are as follows:

1. The Carcass Management Program continues to provide a domestic livestock carcass removal service for livestock producers located in occupied grizzly bear habitat within Park County, Wyoming. The program has been traditionally funded by the Park County Predator Management District and Wyoming Animal Damage Management Board. In addition to those donors, the program received contributions from Park County, Sportsmen for Fish and Wildlife, and TE Ranch. The program provides livestock producers and owners with an alternative to the use of on-site carcass dumps, which are a significant bear attractant and indirectly contribute to numerous human-bear conflicts. Since June 2008, 553 domestic livestock carcasses have been removed from private lands.
2. Recommendations concerning the proper storage of garbage and other attractants are provided to the Park County Planning and Zoning Commission for new developments within the greater Cody area. The Coordinator reviews proposed developments on a case-by-case basis, attends monthly meeting and contacts applicants directly to discuss conflict prevention measures. To date, these comments have been adopted as either formal recommendations or as a condition of approval for 18 new developments within Park County.
3. A traveling Bear Aware educational display was developed and produced for use in public libraries across northwest Wyoming. The display focuses on the prevention of human-bear conflicts and features graphics, an interactive touch screen monitor, short video segments, a grizzly bear hide and skull, and educational materials that are available for check out. The display was featured at the Lander Library April through June.
4. The Wyoming Game and Fish partnership with the North Fork Bear Wise Group (NFBWG) continues to grow. The group is comprised of six local Wapiti citizens that meet monthly in order to articulate community needs and assist in the development of educational and outreach initiatives.
5. A “Bear Aware” billboard, “Bear Use Area” highway signs, and educational kiosks remain posted throughout Wapiti and the Crandall/Sunlight area north of Cody. Kiosk message boards are updated three times during the non-denning season with seasonally appropriate conflict prevention information.
6. Department employees built two permanent electric fences for residents west of Cody. One electric fence was put around an apple orchard and the other around a garden; both had historically attracted bears to close proximity to housing.



7. Bear Aware information was given to Cody Lodging Company to be distributed to temporary summer rental properties. These properties are scattered throughout grizzly bear habitat and often house travelers for a week at a time.
8. Educational black bear/grizzly bear identification materials were distributed to individuals and to local sporting goods stores in the Cody, Pinedale, and Lander areas and mailed to black bear hunters who registered bait sites with the Department in areas surrounding the GYA.
9. Numerous informational presentations were given that focused on human-bear conflict prevention to audiences including the Park and Big Horn County public school systems, homeowners associations, Boy Scouts, 4-H members, DANO, Paint Rock Hunter Management Program, guest ranches, and college students. Frequent 1-on-1 contacts were made during the 2013 conflict season in areas where the occurrence of human-bear conflicts has historically been high.
10. A “Working Safely in Bear Country” workshop was conducted for the Park County Weed and Pest District, Bureau of Land Management, Wyoming River Trips, West Yellowstone Smoke Jumpers, Cody Search and Rescue, and Marathon Oil and Gas.
11. A booth containing information on bear identification, attractant storage, hunting and recreating safely in bear country, and the proper use of bear spray was staffed at the

Powell Valley Health Fair, Cody Arbor Day, Park County Employee Health Fair, Spring into Yellowstone, and Sportsmen for Fish and Wildlife Banquet.

12. A public service announcement (PSA) was recorded by the Yellowstone Country Bear Hunters Association (YCBHA) on “Black Bear/Grizzly Bear ID” and broadcast over the radio in the spring and fall of 2013. The WGFD, YCBHA, NFBWG split the cost of the PSA’s. The NFBWG also purchased a spot for a bear spray advertisement in the Cody Enterprise Hunting Edition.
13. Department employees reviewed human-bear safety material for Wyoming Hunter Safety Course, IGBC pamphlets, IGBC bear spray video, and New Mexico Game and Fish/Wildlife Management supplemental/distributive feeding of bears.

Pinedale Area Update

In 2011, a Bear Wise Community effort was initiated targeting residential areas north of Pinedale, Wyoming where the occurrence of human-bear conflict has increased in recent years. Accomplishments for the Pinedale area in 2013 are as follows:

1. The Department hosted “Living in Lion, Bear, and Wolf Country” workshops in Pinedale and Farson. About 50 people attended the workshops.
2. Hunting in Bear Country presentations were given to 3 hunter safety classes in the Region.
3. A bear safety presentation was given to cowboys and sheepherders of two different grazing associations in the Region.
4. A bear safety presentation was given to two natural gas production companies in the Region.
5. A bear safety presentation was given to staff members of the Sublette County Chamber of Commerce and Sublette County Visitor’s Center.
6. A bear safety presentation was given to the Pinedale and Big Piney Ranger Districts of the United States Forest Service.
7. A bear safety presentation was given to Sublette County’s Tip Top Search and Rescue group.
8. A bear safety presentation was given to Sublette County Weed and pest workers and volunteers.

9. A bear safety presentation was given to staff members of the Red Cliff Bible Camp and New Fork Lake Boy Scout Camp.
10. A bear safety presentation was given to approximately 30 Pinedale District Bureau of Land Management employees.
11. The Department hosted a bear safety booth at Pinedale's Rendezvous Days Celebration, contacting hundreds of participants over a three day period. Pinedale's Rendezvous Days attracts approximately 10,000 people over the 4 day event and Department employees contact an estimated 1,000 constituents.
12. The Department hosted a bear safety booth at the Cora Rural Fire Department's annual picnic and celebration, contacting dozens of homeowners that live and recreate in occupied grizzly bear habitat.

Objectives for 2014 include continued expansion of the program into the other areas of the state where human-bear conflicts continue to be a chronic issue and the continuation of current educational and outreach efforts in the Cody area with specific focus on areas that have not adopted proper attractant management methods.

The Wapiti and Pinedale area Bear Wise Community programs face the ongoing challenges of: 1) the absence of ordinances, regulations, or laws prohibiting the feeding of bears; 2) limited educational opportunities and contact with portions of the community due to a large number of summer-only residents and the lack of organized community groups and; 3) decreased public tolerance for grizzly bears due to record numbers of human-bear conflicts and continued federal legal protection. The future success of the Bear Wise program lies in continued community interest and individual participation in proper attractant management.

Jackson Hole Project Update

The Bear Wise Jackson Hole program continues educational and outreach initiatives in an effort to minimize human-bear conflicts within the community of Jackson and surrounding areas. In 2013, the program's public outreach and educational efforts included the use of signage, public workshops and presentations, distribution of informational pamphlets, promoting awareness about bear spray, and utilizing our bear education trailer.

1. A bear education trailer was purchased in August 2010 with funding contributions from the Department, Grand Teton National Park, Bridger Teton National Forest and Jackson Hole Wildlife Foundation. Two bear mounts (1 grizzly bear and 1 black bear) have been placed in the trailer along with other educational materials. The bear mounts were donated to the Department through a partnership with the United States Taxidermist Association and the Center for Wildlife Information. The trailer was displayed and

staffed at various events and locations including Teton National Park, Jackson Elk Fest and National Elk Refuge Visitor Center.

2. Public service announcements were broadcast on 4 local radio stations in Jackson for a total of 8 weeks throughout the spring, summer, and fall of 2013. The announcements focused on storing attractants so they are unavailable to bears and hunting safely in bear country.

3. Numerous educational talks were presented to various groups including homeowner's associations, guest ranches, youth camps, Jackson residents, tourists, and school groups.

4. Spanish language bear informational pamphlets were distributed to Spanish speaking residents in Teton County with the help of the Teton County Latino Resource Center, Teton Literacy Center, and the Jackson Visitor Center.

5. Bear educational posters were placed for a fifth year inside of Jackson's public buses.

6. Restroom posters with information about attractant storage were placed in 16 different restaurants in Teton County for a 6-month period.

7. Refrigerator magnets featuring tips about proper attractant management were distributed to Teton Village homeowners and Jackson Hole Mountain Resort lodging.

8. Numerous personal contacts were made with private residents in Teton County. This has proven to be a useful way to establish working relationships with residents and maintain an exchange of information about bear activity in the area.

9. A booth containing information on bear identification, attractant storage, hunting and recreating safely in bear country, and the proper use of bear spray was staffed at the Jackson Hole Antler Auction.

10. Assisted 6 hunting outfitters with the installation and maintenance of electric fence systems around their field camps located in the Bridger-Teton National Forest. A private donation of \$500 was used to purchase additional electric fence equipment for this popular program.

11. Signage detailing information on hunting safely in bear country, bear identification, recent bear activity, and proper attractant storage were placed at USFS trailheads and in private residential areas throughout Teton County.

12. Consultations were conducted at multiple businesses and residences where recommendations were made regarding sanitation infrastructure and compliance with the Bear Conflict Mitigation and Prevention LDR.

13. Bear Aware educational materials were distributed to campground hosts in the Caribou-Targhee National Forest, hunters, and numerous residents in Teton County.

14. Several radio and newspaper interviews were conducted regarding conflict prevention in the Jackson area.

15. Educational black bear/grizzly bear identification materials were distributed to black bear hunters who registered bait sites with the Wyoming Game and Fish Department in the Jackson region.

Objectives for the Bear Wise Jackson Hole program in 2014 will again be focused on supporting Teton County and local waste management companies with projects that will help disseminate information and achieve compliance with the recently adopted Teton County Bear Conflict Mitigation and Prevention LDR. In addition, more work will be done to identify areas within the city limits of Jackson and Star Valley communities where better attractant management and sanitation infrastructure is needed.

The recent implementation of the Teton County Bear Conflict Mitigation and Prevention LDR has greatly reduced the amount of available attractants on the landscape and is a tremendous step forward for the Bear Wise Jackson Hole program. The new challenges faced by the Department will be achieving full compliance with this regulation, even in years with low conflict when it may appear that the conflict issue is resolved. The Bear Wise Jackson Hole Program will convey the importance of compliance and strive to maintain public support for the LDR through public outreach and education projects. In order for the Jackson program to be successful, the program must continually identify information and education needs within the community while being adaptive to changing situations across different geographic areas. This will require the Department to coordinate with other government agencies and local non-government organizations working across multiple jurisdictions to develop a uniform and consistent message. If this level of coordination is achieved, the Department will be more effective in gaining support and building enthusiasm for Bear Wise Jackson Hole, directing resources to priority areas, and reaching all demographics.

References

Servheen C., M. Haroldson, K. Gunther, K. Barber, M. Bruscino, M. Cherry, B. Debolt, K. Frey, L. Hanauksa-Brown, G. Losinski, C. Schwartz, and B. Summerfield. 2004. Yellowstone mortality and conflict reduction report: presented to the Yellowstone Ecosystem Subcommittee (YES) April 7, 2004

ADDITIONAL GRIZZLY BEAR INFORMATION AND EDUCATION EFFORTS

2013 Accomplishments

1) Electronic and Print Media

- a) As per Wyoming Statute, grizzly bear relocation from one county to another must be announced through local media and to the local sheriff of the county into which the bear was relocated. Each announcement is posted in a timely fashion to the web page. In 2013, 10 notifications were distributed and posted on the website.

- b) Personnel issued multiple educational news releases throughout the season informing readers and listeners of bear safety, behavior, conflict avoidance, food storage and natural food availability.

2) Grizzly Bear Management Web Page

- a) The grizzly bear management web page continues to be maintained and updated on a regular basis in order to provide timely information to the public regarding grizzly bear management activities conducted by the department. The web page contents include various interagency annual reports and updates and links to other grizzly bear recovery web sites.
- b) Beginning March 2013, weekly updates of ongoing management activities related to depredations, research, trapping and monitoring, and information and education were posted to the department's website. A total of 34 weekly updates were posted for the weeks of March 23, 2013 through November 8, 2013.

3) Conservation Education

- a) In 2013, nine "Staying Safe in Bear, Lion and Wolf Country" seminars were conducted in an effort to increase understanding and knowledge of bears, bear behavior and conflict avoidance, Statewide, 396 attendees participated in the seminars.

4) Hunter Education

- a) Every hunter education class in Wyoming is required to discuss how to hunt safely in bear country. To assist instructors, most have been provided inert bear spray canisters for demonstration purposes and DVD's entitled Staying Safe in Bear Country, A Behavioral Based Approach to Reducing Risk. A section on bear safety is included in the student manual. In 2013, 5670 students were certified.
- b) On an annually basis, newly certified hunter education instructors are trained by department personal in techniques used to prevent encounters while hunting in bear country and the proper use of bear spray. Inert bear spray canisters are used to demonstrate the proper use of bear spray at our New Instructor Hunter Education Academy and are distributed directly to our volunteer instructors at annual Hunter Education Instructor Workshops held around the state.

Publications

The primary link to other publications, annual reports, and peer reviewed literature for the Yellowstone population of grizzly bears is summarized on the United States Geological Service web site at <http://www.nrmssc.usgs.gov/products/IGBST>.